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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/808,333

03/25/2004

Kazuhito Tsukagoshi

2870-0277PUS1

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EXAMINER

QUACH, TUAN N

ART UNIT

PAPER NUMBER

2826

NOTIFICATION DATE

DELIVERY MODE

11/20/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.		Applicant(s)	
	10/808,333		TSUKAGOSHI ET AL.	
	Examiner		Art Unit	
	Tuan Quach		2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 3-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


Tuan Quach
Primary Examiner

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The finality of the Office action mailed January 29, 2007 is withdrawn and new rejections follow.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awano in view of Webster.

Re claim 1, Awano 7,084,507 teaches device formation of wiring structure including metal and an intervening carbon nanotube where the metal, e.g., drain electrode 222, contacts the carbon nanotube, e.g., 220a and wherein the carbon nanotube is in contact with the component regions in substrate 202 and wherein the

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semiconductor material 202/204 and the metal, e.g., 222, do not directly contact each other. The carbon nanotube thus is employed for connection to device elements as well for interconnection therebetween. The advantages include improved reliability, good migration resistance, improved device characteristics among others. See the abstract, Fig. 19C, column 3 line 31 to column 4 line 45, column 6 lines 30-58, column 9 lines 21-36, column 17 line 13-54. Awano as applied is not limited any semiconductor material (e.g., column 23 line 53, column 24 line 62) but does not explicitly recite the use of the semiconductor material in which the device component being formed to include organic semiconductor material having a 6-membered carbon.

Webster (Wiley Encyclopedia of Electrical and Electronics Engineering, John Wiley & Sons, 1999, vol. 15, pp. 419, 429-434) teach organic materials including conjugated polymers, pentacene, thiophene, which comprise 6 carbon ring, see, e.g., instant specification page 12 lines 1-11 regarding similar organic materials) as conventional semiconductor materials having semiconducting properties and high electronic conductivity that can be prepared by simple fabrication. The organic materials are further taught to be light weight, flexible, conformable and are produced by simple manufacturing technologies which make them potentially very inexpensive compared to inorganic semiconductor materials. See page 419, left column, lines 21 to last-line. Further advantages of organic materials and their applications to semiconductor devices are delineated, tunability of electronic bandgap, processability of the materials on a large scale, substantial reduction of production cost. The various organic materials including anthracene, fullerene, etc., which comprise 6 carbon

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membered ring, see instant specification, page 12 lines 1-11, regarding similar materials). See page 429, right column.

It would have been obvious to one skilled in the art in practicing Awano invention to have employed as the semiconductor material organic semiconductor materials including 6-membered ring taught in Webster since such use is conventional and advantageous as documented by Webster as delineated above, including organic materials having semiconducting properties and high electronic conductivity that can be prepared by simple fabrication, and include further advantages such as light weight, flexible, conformable and are produced by simple manufacturing technologies which make them potentially very inexpensive compared to inorganic semiconductor materials, tunability of electronic bandgap, processability of the materials on a large scale, substantial reduction of production cost, among others. Re claim 2, intended use or application to TFTs in claim 2 would have been apparent given the scope of the structures in Awano, which shows field effect transistors, and in any event, is unpatentable as a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness, but instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).


Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Tuan Quach whose telephone number is 571-272-1717. The examiner can normally be reached on M-F from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Sue Purvis at 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan Quach
Primary Examiner